IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF UTAH

ESIP SERIES 1, LLC, a Utah Limited Liability Company, and ESIP SERIES 2, LLC a Utah Limited Liability Company, Plaintiffs, v. DOTERRA INTERNATIONAL, LLC, a Utah Limited Liability Company, PUZHEN LIFE USA, LLC, a New York Limited Liability Company, PUZHEN, LLC, a New York Limited Liability Company, and DOE COMPANIES 1-9, Defendants.	**MEMORANDUM DECISION AND ORDER CONSTRUING CLAIMS** Case No. 2:15-cv-00779-RJS-DBP Chief District Judge Robert J. Shelby Chief Magistrate Judge Dustin B. Pead

ESIP Series 1, LLC and ESIP Series 2, LLC (collectively, Plaintiff) manufacturer, market, and sell atomizing diffusers for use with essential oils and aroma therapy through authorized licensees. Plaintiff filed this patent infringement action against Defendants doTerra International, LLC; Puzhen Life USA, LLC; Puzhen, LLC; and Doe Companies 1-9 (collectively, Defendants), alleging they make, use, sell, offer to sell, and/or import into the United States a nebulizing diffuser device that infringes Plaintiff's patent for improved diffusion of essential oils.[1]

[1] Plaintiff originally filed this action in 2015, complaining Defendants infringed on U.S. Patent No. 7,878,418. Dkt. 5 (Amended Complaint against doTerra and Puzhen, LLC) and Dkt. 9 (Second Amended Complaint against Puzhen Life USA, LLC and Puzhen, LLC). In 2016, Plaintiff filed another suit in this District against Defendants, Case No. 2:16-cv-01011, concerning both Patent 7,878,418 and another patent, U.S. Patent No. 9,415,130. *See* Dkt. 2 in Case No. 2:16-cv-01011 (Complaint). The 2016 case was consolidated into this one for all purposes, with the Complaint in the 2016 case operating as the governing Complaint. *See* Dkt. 43, Order Consolidating Cases. In June 2020, the parties stipulated to dismiss with prejudice all claims and counterclaims relating to Patent No. 9,415,130, following the Federal Circuit's decision in *ESIP Series 2, LLC v. Puzhen Life USA, LLC*, 958 F.3d 1378 (Fed. Cir. 2020), *cert. denied*, 141 S. Ct. 557, 208 L. Ed. 2d 178 (2020).

Now before the court are the parties' Cross-Motions for Claim Construction.[2] After receiving argument during a *Markman* hearing[3], and for the reasons explained below, the court GRANTS in part and DENIES in part the parties' respective Motions.[4]

BACKGROUND

I. Patented Technology

Plaintiff owns the patent at issue in the parties' Cross-Motions, U.S. Patent No. 7,878,418 (the Patent), for an Integrated, Essential-Oil Atomizer.[5] An essential oil atomizer (or diffuser) is a device that breaks down essential oils into smaller particles, dispersing them into the air.[6] The patented device is shown below in Figure A.[7] In its most basic form, this device consists of an atomizer (16), a housing (12), a reservoir (18), and a pump (14). The Patent describes one embodiment as a "system having a housing for a pump driven by an oscillating motor to draw liquids from a reservoir and distribute them through an eductor into the atmosphere."[8]

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[2] Dkts. 84 (Defendants' Cross Motion for Claim Construction), 86 (Plaintiff's Cross Motion for Claim Construction); *see also* Dkts. 88 (Plaintiff's Response), 89 (Defendants' Joint Response).

[3] *See* Dkt. 100 (Minute Entry for hearing held February 18, 2021).

[4] Dkts. 84 (Defs.' Cross-Motion for Claim Construction) and 86 (Pl.'s Cross Motion for Claim Construction).

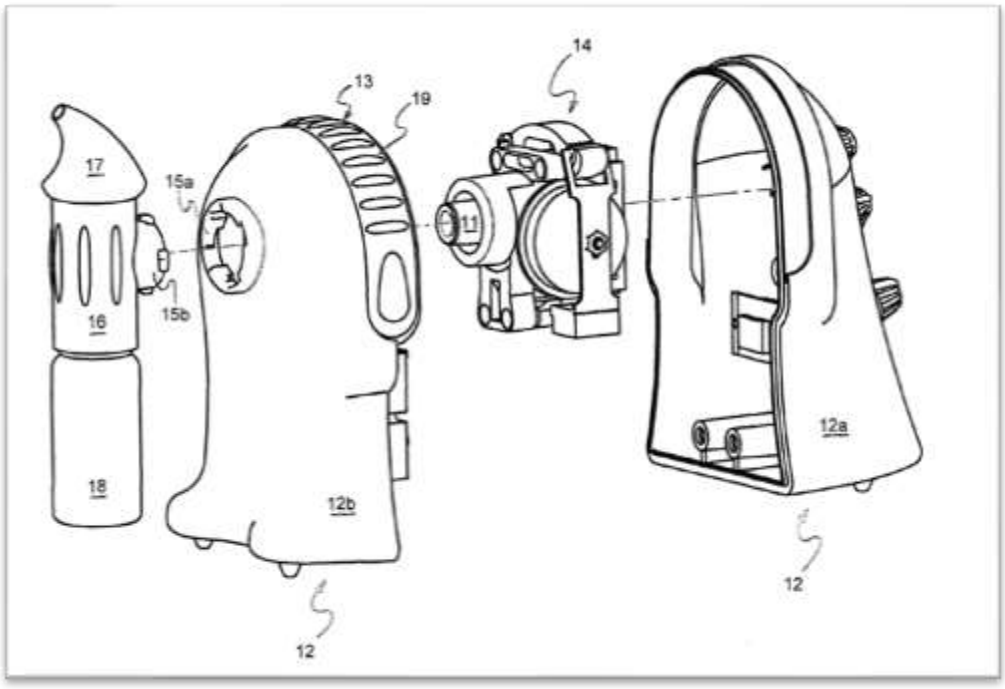
[5] Dkt. 2-1 (Patent) (attached as Exh. A to original 2015 Complaint).

[6] *Id.* at 1:6-15.

[7] *Id.*, Fig. 1.

[8] *Id.* at 2:10-13.

Figure A



The Patent's Background section describes various mechanisms used for dispersing liquid particles into the air, including devices used to apply paint onto surfaces.[9] The Patent recites problems related to these spray-paint devices. First, the pumps are "typically very heavy on the order of several pounds or tens of pounds."[10] Second, the "systems are typically not integrated," leaving large paint reservoirs separate from spray handles and pumps.[11] The Patent claims to improve upon these shortcomings with a smaller, integrated device allowing a safer, simpler application and a better atomization or a smaller average droplet size.[12]

[9] *Id.* at 1:10-13.

[10] *Id.* at 1:24-27.

[11] *Id.* at 1:23-32.

[12] *Id.* at 1:33-67; 2:1-3.

Consistent with our Local Patent Rules, the parties presented to the court six phrases for claim construction.[13] These phrases focus on four different features of the patented invention: (1) the spacing between a nozzle and an aperture, (2) the type of connection between the atomizer and the pump, (3) the amount of anchoring employed by the pump, and (4) the size of oil droplets that either become atomized into the airflow or drop back down into the reservoir. Before construing the language in dispute, the court provides some context relating to each of the four features identified.

1. Nozzle-Aperture Spacing

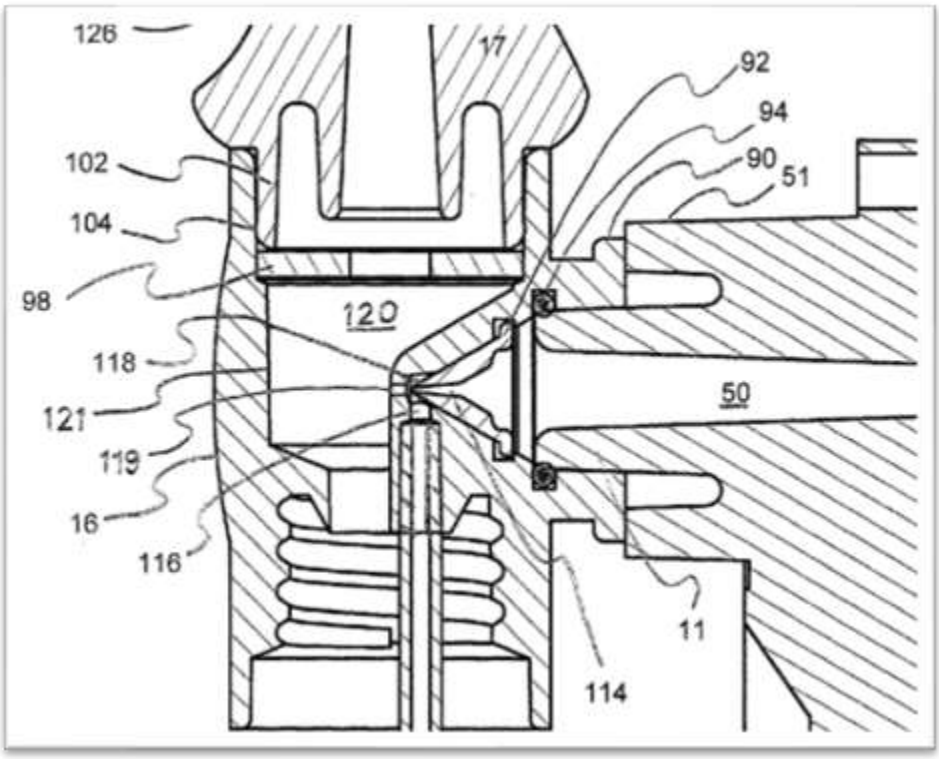
The Patent applies to a device containing a nozzle between a pump and an atomizer that discharges particles into an aperture. The "nozzle [has] a minimum effective diameter discharging the flow therethrough and into an aperture spaced therefrom a distance of from about one to about 10 times the minimum effective diameter of the aperture of the nozzle."[14] The specification does not explicitly go beyond this description of the nozzle-to-aperture spacing, nor does it describe the spacing with reference to other parts. Figure B below illustrates how the nozzle (114) is positioned to discharge airflow into an "exit orifice" (119).[15]

[13] Dkts. 84 (Defs.' Cross-Motion for Claim Construction) and 86 (Pl.'s Cross Motion for Claim Construction); *see also* Dkts. 88 (Pl.'s Response), 89 (Defs.' Joint Response).

[14] Patent at 3:14-18.

[15] *Id.* at 10:37-56.

Figure B[16]



2. Atomizer-Pump Connection

The Patent points to connections between the atomizer, the reservoir, and the pump, explaining that the "atomizer may be connected directly to a reservoir" and also the "atomizer may be connected directly to a pump[.]"[17] The Patent describes these connections with reference to Figure 1 of the Patent (Figure A above): "An outlet 11 from the pump may protrude into or through a housing connector 15b mated to secure to a connector 15b as part of an atomizer 16."[18]

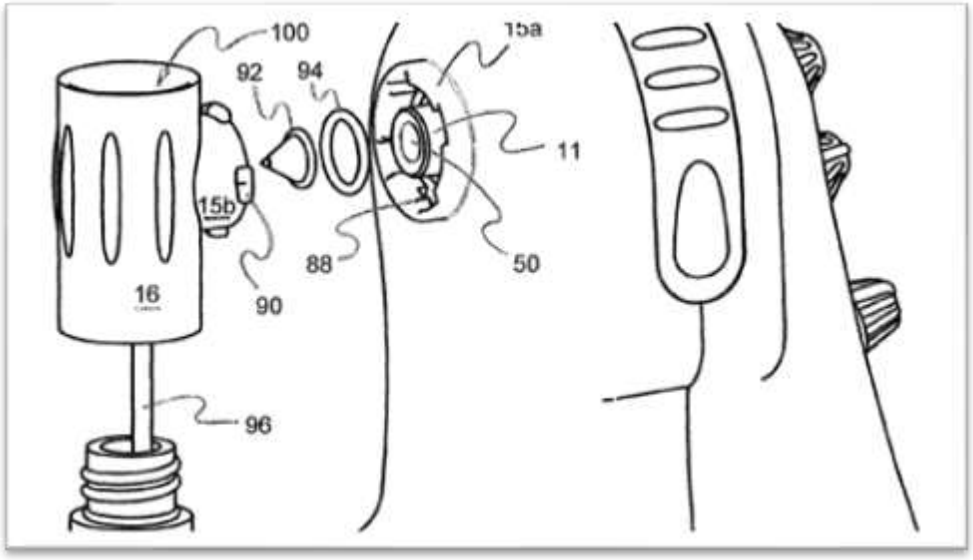
[16] *Id.*, Fig. 9.

[17] *Id.* at 2:22-25.

[18] *See id.* at 5:22-24; *see also id.* at 8:16-19 ("the actual outlet 11 of the pump 14 stands away from the connector 15a and near the center thereof. The atomizer 16 may connect directly to the outlet 11.").

This engagement between the pump outlet 11 and the atomizer 16 is "sealed" using an o-ring seal (94) with a nozzle (92) fitting within a cavity of the atomizer, as shown in Figure C below.[19]

Figure C[20]



3. Pump Anchoring

The Patent explains the atomizer can be "anchored" to a support surface to prevent the device from tipping over and spilling. In one embodiment, the Patent states that "[t]he atomizer may be connected directly to the pump anchoring the atomizer to a supporting surface by weight, stability, base, or the like."[21] In other embodiments, the function of "[a]nchoring the atomizer" can be accomplished by "both of the pump and housing assembly" to "reduce[] the chance of breakage or spilling of an atomizer system sitting on a supporting surface."[22]

[19] *Id.* at 8:28-44.

[20] *Id.*, Fig. 7.

[21] *Id.* at 2:20-26.

[22] *See id.* at 3:37-40 (emphasis added); *see also id.* at 6:47-49 (". . . the housing 12 and its contents provide a stable platform to support the atomizer 16 on a surface.").

4. Droplet Size

The Patent describes the process of atomizing oil droplets and infusing them into an airflow:

> The liquid from the siphon 96 is atomized into droplets of various sizes . . . . Large droplets break into smaller droplets. Some droplets agglomerate against the wall 121 and begin to drift or drip down toward the reservoir 18. Other droplets, having comparatively smaller effective diameters, are more easily entrained in the air, and pass with it through the separator chamber and out apertures 122 in the separator plate 98.[23]

The few references within the Patent relating to what constitutes a "comparatively large" versus a "comparatively small" droplet consistently provide the same measure:

> Spraying the droplets into a separator removes droplets insufficiently small to be carried indefinitely by ambient air movement. The separator and flow are sized to release with the air flow those droplets having an effective diameter of from about 1 micron to about 5 microns. Smaller droplets tend to evaporate into the air stream, while larger ones tend to settle down or agglomerate on surfaces to be returned to the reservoir.[24]

II. Asserted Independent Claims

Plaintiff alleges Defendants' device infringes independent claims 1, 2, and 14 of the Patent. Claims 1 and 2 are effectively the same. Claim 1 states:

> . . . providing an atomizer comprising an eductor and a separator, the atomizer being *connected directly to a reservoir and to a pump anchoring the atomizer* to a supporting surface; the providing an atomizer wherein the eductor comprises a nozzle having a minimum effective diameter discharging the flow therethrough and into an *aperture spaced therefrom* a distance of from about one to about 10 times the minimum effective diameter . . . educting a liquid directly from the reservoir into the flow; atomizing the liquid into droplets by the educting and by colliding against a wall of the separator; separating the droplets by size; recovering *comparatively larger droplets* into the reservoir; passing

[23] *Id.* at 10:44-56.

[24] *Id.* at 3:49-56; *id.* at 10:65-11:4 ("Ultimately, the jet of air expelled from the port 106 carries with it only those droplets that are sufficiently small, typically on the order of from about 1 to about 5 microns in diameter such that they will drift substantially indefinitely with ambient air movement as they evaporate.").

> *comparatively smaller droplets* from the atomizer out through the separator with the flow . . . .[25]

Claim 14 adds "an atomizer, integrated with the pump, the atomizer being anchored by the pump and receiving directly therefrom a flow of pressurized air . . . ."[26]

The following claim terms are in dispute and require construction:

- "aperture spaced therefrom" (all claims)
- "comparatively smaller droplets" (all claims)
- "comparatively larger droplets" (all claims)
- "the atomizer being connected directly to a reservoir and to a pump" (claims 1, 2)
- "a pump anchoring the atomizer to a supporting surface" (claims 1, 2)
- "the atomizer being anchored by the pump" (claim 14)

LEGAL STANDARDS

Patent infringement analysis generally involves two steps. "The first step is determining the meaning and scope of the patent claims asserted to be infringed. . . . The second step is comparing the properly construed claims to the device accused of infringing."[27] Here, the court is concerned only with the first step of claim construction. This is a matter of law for the court to resolve.[28]

Claim terms generally embrace their "ordinary and customary meaning, which is the meaning they would have to a person of ordinary skill in the art at the time of the invention."[29] The person of ordinary skill is deemed to read claim terms in view of the entire patent, including intrinsic and extrinsic evidence.[30] Courts typically begin claim construction by considering the

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[25] *Id.* at 11:46-67 (emphasis added).

[26] *Id.* at 14:20-22.

[27] *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed. Cir. 1995) (en banc), aff'd, 517 U.S. 370 (1996).

[28] *Allen Eng'g Corp. v. Bartell Indus., Inc.*, 299 F.3d 1336, 1344 (Fed. Cir. 2002).

[29] *Poly-America, L.P. v. API Indus., Inc.*, 839 F.3d 1131, 1136 (Fed. Cir. 2016) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005)).

[30] *Phillips*, 415 F.3d at 1313.

patent's intrinsic evidence,[31] which includes the claims themselves, the specification, and the prosecution history.[32] The specification "is the single best guide to the meaning of a disputed term"—so much so that "[u]sually it is dispositive."[33] Moreover, "the specification may reveal a special definition that differs from the meaning it would otherwise possess."[34]

To understand the meaning of claim language, courts also have discretion to consider extrinsic evidence, including expert reports, inventor testimony, dictionaries, and learned treatises.[35] While extrinsic evidence is generally less reliable than intrinsic evidence, these sources may illuminate relevant scientific principles, the meaning of both technical and non-technical terms, and the state of the art.[36] For example, "general purpose dictionaries may be helpful" when analyzing common, non-technical terms.[37]

ANALYSIS

The parties dispute the respective ordinary meanings of the following claim terms: (1) "spaced therefrom" in claims 1 and 14, (2) "the atomizer being connected directly to a reservoir and to a pump" from claim 1, (3) "a pump anchoring the atomizer to a supporting surface" from claim 1, (4) "the atomizer being anchored by the pump" from claim 14, (5) "comparatively smaller droplets" from claims 1 and 14, and (6) "comparatively larger droplets" from claims 1 and 14. The parties' competing constructions are shown in the table below.

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[31] *Id.* at 1314–15.

[32] *Id.* at 1314.

[33] *Id.* at 1315 (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1325 (Fed. Cir. 2002)).

[34] *Id.* at 1316.

[35] *Id.* ("In exercising that discretion, and in weighing all the evidence bearing on claim construction, the court should keep in mind the flaws inherent in each type of evidence and assess that evidence accordingly.").

[36] *Id.* at 1318–19.

[37] *Id.* at 1314.

No.	Claim Term	STIPULATED CONSTRUCTION	
1	"duty cycle" (claims 1 and 2)	"the fractional time of operation compared to the total elapsed time"	
2	"integrated with the pump" (claim 14)	"not separate from the pump"	
	Claim Term[38]	**PLAINTIFF'S PROPOSED CONSTRUCTION**	**DEFENDANTS'S PROPOSED CONSTRUCTION**
3	discharging the flow … into an aperture "**spaced therefrom**" a distance of … one to about 10 times the … diameter" (claims 1 and 14)	Plain and ordinary meaning	Plain and ordinary meaning, or "arranged so the nearest point of the aperture from the nozzle is…"
4	"**the atomizer being connected directly to a reservoir and to a pump**" (claim 1)	"the atomizer is connected directly to a reservoir and the atomizer is connected to a pump"	Plain and ordinary meaning, or "the atomizer is connected directly to a reservoir and the atomizer is connected directly to a pump"
5	"the atomizer being connected directly to a reservoir and to a "**a pump anchoring the atomizer to a supporting surface**" (claim 1)	"when the atomizer is connected to the pump, the connection with the pump provides some anchoring of the atomizer to a supporting surface by the pump's weight, bulk, stability, base, or the like"	Plain and ordinary meaning, or "a pump firmly securing the atomizer to a supporting surface"
6	"**the atomizer being anchored by the pump**" (claim 14)	"when the atomizer is integrated with the pump, the integration with the pump provides some anchoring of the atomizer by the pump's weight, bulk, stability, base, or the like"	Plain and ordinary meaning, or "the atomizer being firmly secured by the pump"

[38] Disputed terms are in **bold**; non-bolded text merely supplies context.

7	"**comparatively smaller droplets**" **"comparatively larger droplets**" (claims 1 and 14)	Plain and ordinary meaning	"droplets having an effective diameter of from about 1 micron to about 5 microns" "droplets having an effective diameter greater than about 5 microns"

I. Aperture "Spaced Therefrom"

Claim Term	PLAINTIFF'S PROPOSED CONSTRUCTION	DEFENDANTS' PROPOSED CONSTRUCTION
discharging the flow … into an aperture "**spaced therefrom**" a distance of … one to about 10 times the … diameter" (claims 1 and 14)	Plain and ordinary meaning	Plain and ordinary meaning, or "arranged so the nearest point of the aperture from the nozzle is…"

The first claim construction issue involves the distance recited in the eductor limitations based on the phrase, "aperture spaced therefrom."[39] The eductor is a structure that pulls and accelerates the liquid from one place to another, allowing the liquid to become atomized into a mist.[40] Claims 1 and 14 describe the composition of the eductor: "the eductor comprises a nozzle having a minimum effective diameter discharging the flow therethrough and into an *aperture spaced therefrom* a distance of from about one to about 10 times the minimum effective diameter."[41] In other words, the air travels from the nozzle and into the aperture a distance of "one to about 10 times" the nozzle's diameter. Since the claim already provides the specific distance ("one to about 10 times . . ."), the dispute is not about the required distance but what space that distance covers.

[39] Patent at 11:52-54 ("discharging the flow therethrough and into an aperture spaced therefrom . . .").

[40] *Id.* at 3:41-48; 14:33-36.

[41] *Id.* at 3:41-48.

It may be helpful to consider the illustrations the parties use in their respective Motions.[42] Defendants submit Figure D to illustrate the dispute.[43] Figure D depicts the nozzle, the aperture, and two measurements. The top line, entitled "Defendants," of course reflects Defendants' own position. The bottom line, entitled "ESIP," reflects Defendants' understanding of Plaintiff's position after meeting and conferring before briefing the issue.

Figure D

Plaintiff complains about Defendants' use of illustrations,[44] but Plaintiff also supplies figures to illustrate its position.[45] Plaintiff submits Figure E, stating: "The distance shown as 'X' is the distance Defendants contend is recited in the eductor limitation. The distance shown as 'Y'

[42] The parties' illustrations are used exclusively to highlight their respective positions. The court does not weigh these illustrations in construing the claim language.

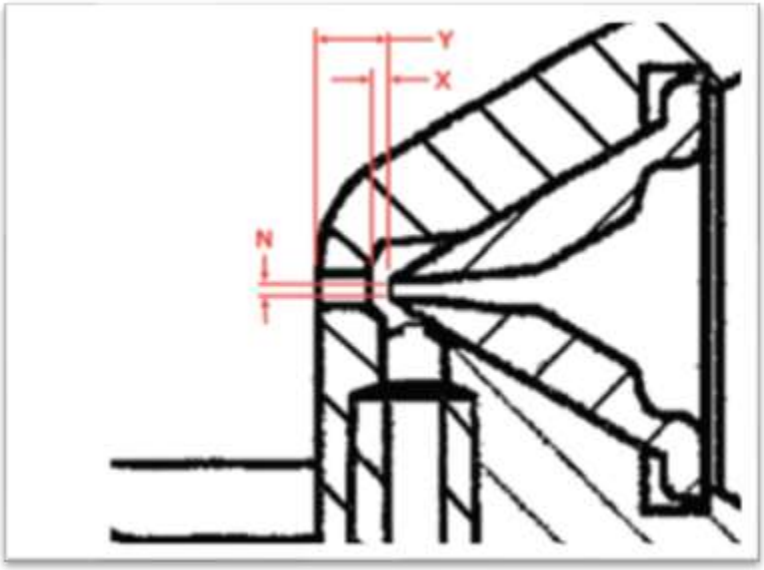
[43] Dkt. 84 (Defs.' Joint Cross-Motion for Claim Construction) at 8.

[44] Plaintiff argues that Defendants' illustrations added a space between the nozzle and the aperture, specifically referencing the Patent's Figure 9: "In Fig. 9, there is no room for Defendants' dimension 'X' because the tip of nozzle 92 needs to feed its entire flow and liquid entrained thereby into cavity 116 and toward exit orifice 119 in order for the eductor to function properly." Dkt. 88 (Pl's. Response) at 11. However, in their own Motion for Claim Construction, Plaintiff also explains that "some space is required between the nozzle and the aperture to allow for the momentum transfer that makes the eductor operational." Dkt. 86 at 8.

[45] *See* Dkt. 88 (Pl's. Response) at 7, 9-11.

is the distance ESIP contends is recited in the eductor limitations."[46] Plaintiff also prepared Figure F, depicting the nozzle, the aperture, and one measurement.[47] That measurement, extending from the tip of the nozzle to the outer opening of the aperture, reflects Plaintiff's position regarding the disputed distance.

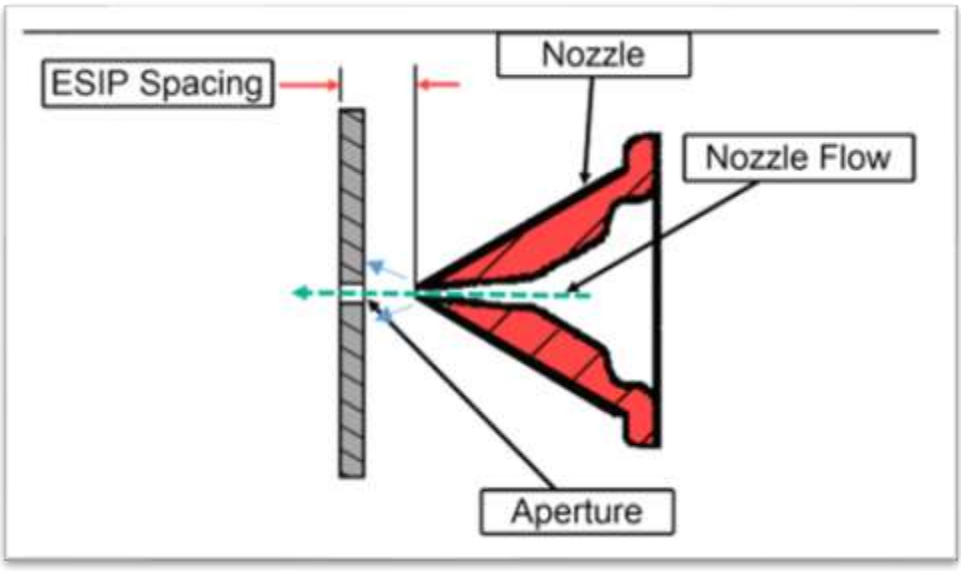
Figure E



[46] *Id.* at 8.

[47] *Id.* at 10.

Figure F



Before analyzing the disputed distance, it is crucial to understand whether the claimed aperture is three-dimensional or, as Plaintiff sometimes argues, a two-dimensional planar opening. To be clear, the Patent does not require a specific type of aperture. However, it is an ordinary fact that every hole in a three-dimensional object has not only length and width, but also depth. A piece of paper, for example, has a comparatively small depth—usually to the thousandths of an inch—but depth nonetheless. Here, the functional dimension of the aperture 119 requires that the aperture not only has length and width but also that the aperture also has a non-zero depth. The aperture cannot comprise only a "two-dimensional, planar opening" as suggested by Plaintiff.[48] Since this aperture has three dimensions, there must be two openings along the aperture structure – the first being where the air initially enters and the second where the air exits. The airflow is thus discharged from the nozzle into and through this three-dimensional aperture.

[48] *Id.* at 8.

Returning to the present dispute, the parties disagree about whether the nozzle-to-aperture measurement refers to the distance between the nearest points of these two objects (tip of the nozzle to entrance of the aperture) or the distance from the nozzle to the more distant, exit opening of the aperture. Defendants provide a common-sense construction that "spaced therefrom" should be defined as "arranged so the nearest point of the aperture from the nozzle is" the specified distance.[49]

Plaintiff's position is not as clear. In its papers, Plaintiff proposes the "plain and ordinary meaning," arguing the correct measurement is from the exit of the nozzle to the exit of the aperture.[50] But Plaintiff seemed to abandon that position during the *Markman* hearing, instead arguing the contemplated distance was from the nozzle to an undefined location along an aperture. The court is generally reluctant to consider new arguments or positions introduced for the first time at oral argument where the opposing party is left without a meaningful opportunity to respond.[51] That is especially so where a party takes a position during argument that is inconsistent with its earlier position. Ultimately, it makes no difference here as neither of Plaintiff's proposed approaches is persuasive.

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[49] Dkt. 84 (Defs.' Joint Cross-Motion for Claim Construction) at 7-8.

[50] Plaintiff provides two different figures in its Motion to illustrate its position that the distance should be measured from the tip of the nozzle to the outer, more distant opening of the three-dimensional aperture. *See* Dkt. 88 at Fig. 7 and 8 (explaining that "'Y' is the distance ESIP contends is recited in the eductor limitations. ESIP's distance 'Y' is supported by the intrinsic evidence because the claim recites and the intrinsic evidence describes a functional eductor configuration with 'exit orifice 119' as the exit opening out of eductor cavity 116 of that eductor configuration."); *see also* Dkt. 88, Fig. at 10 (depicting "ESIP Spacing" between the tip of the nozzle to the exit or more distant opening of the aperture).

[51] *See* Local Patent Rule 4.2, n. 1 ("Given the extensive disclosure required under these rules and the requirement to file the Joint Appendix with the Cross-Motions for Claim Construction, the committee believed all parties would have an understanding of each other's positions prior to briefing.") (emphasis added); *see also Wi-LAN USA, Inc. v. Apple Inc.*, 830 F.3d 1374, 1385 (Fed. Cir. 2016) ("We generally support a district court's case-management authority to set a schedule for claim construction that requires parties to take positions on various dates and holds the parties to these positions.").

Since "aperture spaced therefrom" is not a technical term of art, "dictionaries may be helpful" to understanding the ordinary meaning of the phrase.[52] Cambridge English Dictionary defines the verb "space" as "to arrange things or people so that there is some distance or time between them."[53] Merriam-Webster defines "to space" as "to place at intervals or arrange with space between."[54] Dictionary.com defines "to space" as "to set some distance apart."[55] These definitions focus on the space between two objects, not the length between one object's nearest point and the other object's furthest point. "Spaced" implies the existence of space or distance between the nearest points of two objects. Applied here, the claimed distance ("between 1 and 10 times the diameter of the nozzle") refers to the space between the nearest point of the nozzle and the nearest point of the aperture.

The surrounding language within the claims further supports this meaning of "spaced therefrom."[56] Before describing the specified distance, Claims 1 and 14 describe the airflow while pointing to two objects: "the eductor comprises a *nozzle* . . . discharging the flow therethrough and into an *aperture* spaced therefrom."[57] The second object (the aperture) is preceded in the claim language by the term "into."[58] The claim does not state that the air must be discharged *out of*, or *through*, or *exiting* an aperture. "[*I*]*nto* an aperture" suggests the

[52] *Phillips*, 415 F.3d at 1314.

[53] *Space*, Dictionary.Cambridge.org (accessed March 16, 2021).

[54] *Space*, Merriam-Webster.com (accessed March 16, 2021).

[55] *Space*, Dictionary.com (accessed March 16, 2021).

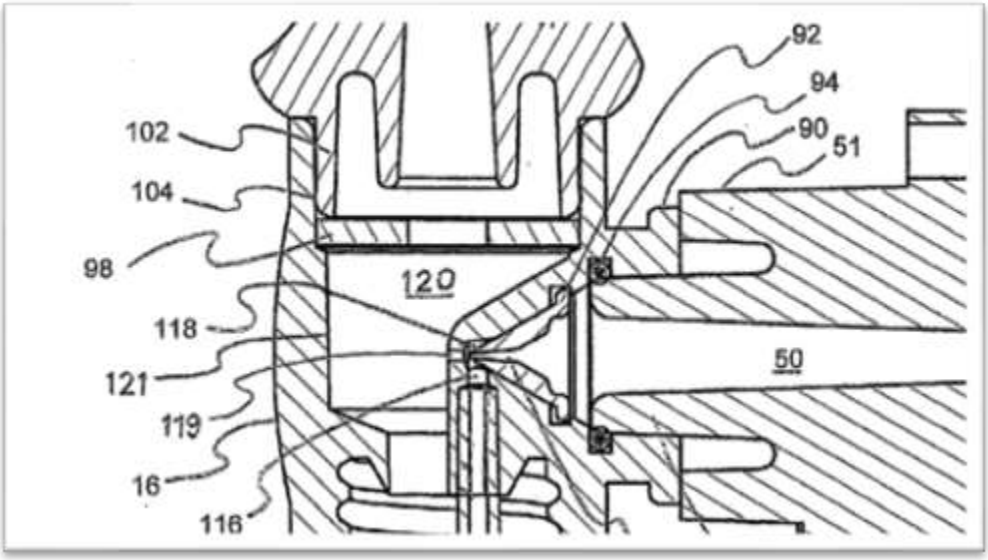
[56] *See, e.g.*, *Phillips*, 415 F.3d at 1314 (noting "the claims themselves provide substantial guidance as to the meaning of particular claim terms."); *ACTV, Inc. v. Walt Disney Co*., 346 F.3d 1082, 1088 (Fed. Cir. 2003) ("the context of the surrounding words of the claim also must be considered in determining the ordinary and customary meaning of those terms.").

[57] Patent at 11:46-12:3; *id.* at 14:8-36.

[58] *Id.* at 14:33-36 ("discharging the flow . . . *into* an aperture spaced therefrom. . .") (emphasis added).

measurement should be from the tip of the nozzle to the first entry point of the aperture, being the closest part of the aperture *into* which the air is discharged as it leaves the nozzle.

Figure B



Plaintiff attempts to avoid this conclusion, calling attention to the Patent's use of several different terms to describe aperture 119. Figure B above is a helpful reference. The specification refers to aperture 119 as an orifice: "Toward the atomizer 16, the cavity 116 is open to yet another *orifice* 119."[59] It is also referred to as an exit orifice: "The exit orifice 119 permits discharge of fluids including air from the orifice 118 and liquid from the siphon tube 96 out of the *exit orifice* 119."[60] The specification later refers to 119 as a chamber: "The nozzle 92, and particularly the orifice 118, acts as an eductor transferring momentum to the surrounding air, and tending to evacuate the *chamber* 119."[61]

[59] *Id.* at 10:32-33 (emphasis added).

[60] *Id.* at 10:33-36 (emphasis added).

[61] *Id.* at 10:37-40 (emphasis added).

Plaintiff argues that because the claim references an "*exit* orifice," the distance in question should be from the nozzle to the more distant, outer, or *exit* opening of the aperture.[62] However, there's little evidence to show that the term "exit" in the specification referred to the aperture itself. Considering the context, the "exit" modifier is more likely a reference to the fact that the entire tunnel-like aperture, including its nearest point, functions as an exit from the cavity 116.

In conclusion, Defendants' common-sense construction prevails. The Patent claims "a nozzle . . . discharging the flow therethrough and into an aperture spaced therefrom a distance of from about one to about 10 times the minimum effective diameter."[63] The term "spaced" suggests the existence of space or distance between the nearest points of two objects, not the length between one object's (nozzle) nearest point and the other's (aperture) most distant point. The nozzle discharges the airflow "*into* an aperture," which suggests that the distance spans from the tip of the nozzle to the first entry point of the aperture, the initial opening *into* which the air flows.

II. Atomizer "Connected Directly" to Pump

Claim Term	PLAINTIFF'S PROPOSED CONSTRUCTION	DEFENDANTS' PROPOSED CONSTRUCTION
"**the atomizer being connected directly to a reservoir and to a pump**" (claim 1)	"the atomizer is connected directly to a reservoir and the atomizer is connected to a pump"	Plain and ordinary meaning, or "the atomizer is connected directly to a reservoir and the atomizer is connected directly to a pump"

[62] *See id.*at 10:28-43 (emphasis added); *see also id.*, Fig. 9.

[63] *Id.* at 3:41-48.

The second dispute involves whether the connection between the atomizer and the pump must be a direct connection. Claim 1 recites "the atomizer being connected directly to a reservoir and to a pump."[64] Plaintiff argues the term "directly" modifies only the atomizer's connection to the reservoir, not to the pump.[65] In contrast, Defendants contend "directly" modifies both the atomizer's connection to the reservoir and the atomizer's connection to the pump.[66]

Defendants list in their papers various references in the specification describing a direct connection between the pump and the atomizer.[67] However, most of these references include language clarifying that a direct connection is merely permissible, not required.[68] For instance, the specification almost invariably uses the term "may" before describing a direct connection between the pump and the atomizer: "The atomizer may be connected directly to a pump,"[69] "atomizer may connect directly to the pump, a second connector thereof directly to the reservoir,"[70] "atomizer may be connected directly to the pump."[71]

The word "may" indicates a possibility, or a permissiveness of the direct connection.[72] Thus, use of the word "may" provides strong evidence the atomizer is not required to be directly connected to the pump. Defendants' proposed construction essentially writes the word "may" out

[64] *Id.* at 11:46-48.

[65] Dkt. 86 (Pl.'s Cross-Motion for Claim Construction) at 9-12.

[66] Dkt. 84 (Defs.' Joint Cross-Motion for Claim Construction) at 11-15.

[67] *Id.* at 12-13.

[68] *Id.* (citing Patent at 2:22-26; 2:52-54; 3:30-34; 5:22-24; 7:16-19).

[69] Patent at 2:22-26.

[70] *Id.* at 2:52-54.

[71] *Id.* at 3:30-34.

[72] *May*, Merriam-Webster.com (accessed March 16, 2021) ("used to indicate possibility or probability," "to have permission").

of the relevant provisions of the specification in favor of a result in obvious contradiction with the plain, permissive meaning of the word. Defendants' arguments fail to account for this.

Language within Claim 3 itself also points to the likelihood that "directly" in Claim 1 modifies only the connection between the atomizer and the reservoir. Claim 3 states: "The method of claim 2, further comprising connecting a first connector of the atomizer directly to the pump, a second connector thereof directly to the reservoir, and a third connector thereof directly to a distributor."[73] A patent drafter's word choice is presumed to be intentional.[74] In Claim 3, the Patent's author employs the term "directly" immediately before all three objects, clearly specifying a direct connection for each. The drafter chose not to do this in Claim 1. That result is presumed to be intentional. Considering the repeated usage of "directly" in Claim 3, it is unlikely the drafter used the term "directly" in Claim 1 when describing the reservoir's connection, but unintentionally or mistakenly omitted the term when describing the atomizer's connection. Of course, Claim 3 is not a method claim and Claim 1 is a method claim. Nonetheless, Claim 3 is nearly adjacent to Claim 1 and its language provides insight and context to how the Claim 1 was written, casting doubt on the allegedly required direct connection to the atomizer.

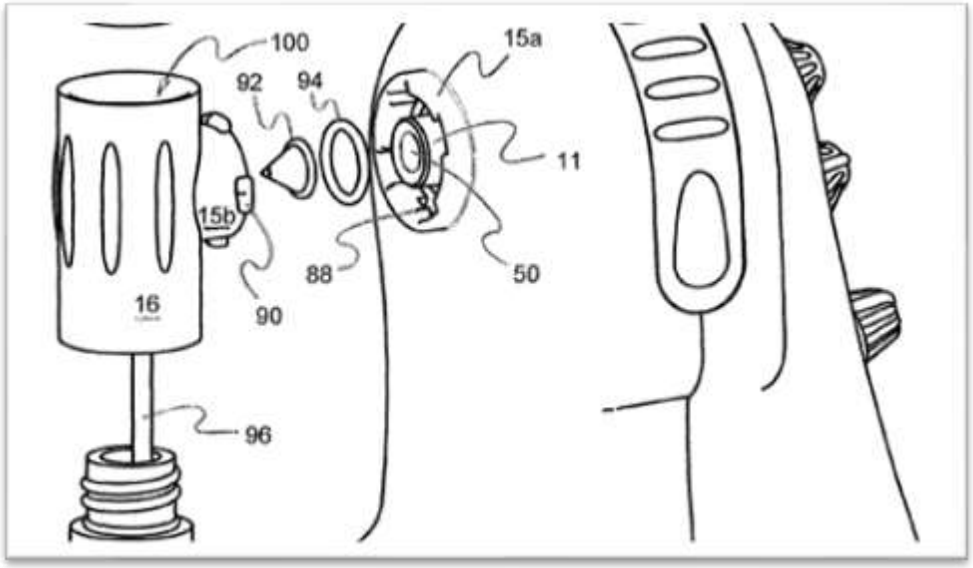
Other language in the Patent also sheds light on the disputed connection in Claim 1. With reference to Patent Figure 7 (Figure C below), the specification distinguishes between a mechanical or structural connection and a fluid connection: "Notwithstanding the atomizer 16 is secured by the connector 15b to the connector 15a of the housing 12, the actual fluid connection between the atomizer 16 and the pump 15 is direct. That is, for example, the seal 94 between the

[73] Patent at 12:8-11.

[74] *See Curtiss-Wright Flow Control Corp. v. Velan, Inc*., 438 F.3d 1374, 1380 (Fed. Cir. 2006) (citations omitted); *see also Ortho-McNeil Pharm., Inc. v. Mylan Labs., Inc*., 520 F.3d 1358, 1362 (Fed. Cir. 2008) (rejecting a construction that would "render several dependent claims meaningless").

atomizer 16 and the outlet 11 of the pump 14 provides the actual air seal between the atomizer 16 of the pump 14."[75]

Figure C[76]



Here, the Patent describes two different types of connections between the atomizer and the pump. First, a mechanical connection, which is how the two objects physically fit together. And second, and a fluid connection, which is the pathway or conduit through which the particles pass with the device.[77] The drafter employs the term "notwithstanding" before describing the mechanical connection, which appears to be indirectly connected or buffered by the housing "connector 15b" and "connector 15a."[78] This mechanical connection is contrasted with the fluid connection, which is explicitly described as a "direct" connection.[79] The word "notwithstanding"

[75] Patent at 10:11-16.

[76] *Id.*, Fig. 7.

[77] *Id.* at 10:11-16.

[78] *Id.* at 10:11-12.

[79] *Id.* at 10:12-14.

conveys the drafter's intention that the atomizer-to-pump mechanical connection is different than the atomizer-to-pump fluid connection. In other words, the Patent provides that in contrast to the potentially indirect mechanical connection between the atomizer and the pump, the fluid connection is direct. Plaintiff's position that "directly" modifies only the connection between the reservoir and the pump is thus supported by the fact that the relevant portion of Claim 1 discusses the physical connection of the components,[80] not the fluid connection within the device.

In addition, if the order of the words in the phrase is reversed, from "connected directly" to "directly connected," then the "directly" modifier seems more clearly to apply to both objects that follow – requiring direct connections both to the pump and the reservoir.[81] This point may have been unintentionally illustrated in Defendants' briefing where Defendants themselves reversed the order to "directly connected" multiple times when attempting to support their position.[82]

The court concludes Plaintiff's proposed construction prevails. "Directly" modifies only the atomizer's connection to the reservoir, not the pump. The persistent usage of "may" throughout the specification strongly implies that a direct connection is merely permissible, not required. Claim 3 also shows that the author knows how to use the "directly" modifier in succession if that is the drafter's intent: "first connector of the atomizer directly to the pump, a second connector thereof directly to the reservoir, and a third connector thereof directly to a

[80] *Compare id.* at 11:47-50 ("an atomizer comprising an eductor and a separator, the atomizer being connected directly to a reservoir and to a pump anchoring the atomizer to a supporting surface"), *with id.* at 12:27-29 ("operating the pump to pressurize ambient air into a flow through the atomizer; educting a liquid directly from the reservoir into the flow").

[81] *See id.* at 11:49 ("atomizer being connected directly . . .").

[82] Dkt. 89 (Defs.' Joint Responsive Claim Construction Brief) at 11-12.

distributor." And use of "notwithstanding" in the specification further illustrates the intended contrast between the fluid connection to the pump and the atomizer, which is explicitly called "direct," and the mechanical connection, lacking that modifier.

III. Pump "Anchoring" the Atomizer & Being "Anchored" by the Pump

Claim Term	PLAINTIFF'S PROPOSED CONSTRUCTION	DEFENDANTS' PROPOSED CONSTRUCTION
"the atomizer being connected directly to a reservoir and to a "**a pump anchoring the atomizer to a supporting surface**" (claim 1)	"when the atomizer is connected to the pump, the connection with the pump provides some anchoring of the atomizer to a supporting surface by the pump's weight, bulk, stability, base, or the like"	Plain and ordinary meaning, or "a pump firmly securing the atomizer to a supporting surface"

The dispute here involves the level of anchoring the pump provides to the atomizer. Claim 1 recites "an atomizer comprising an eductor and a separator, the atomizer being connected directly to a reservoir and to a *pump anchoring the atomizer* to a supporting surface[.]"[83] Claim 14 recites "an atomizer, integrated with the pump, the atomizer being anchored by the pump and receiving directly therefrom a flow of pressurized air[.]"[84]

Defendants' proposal replaces the term "anchoring" with the phrase "firmly secure." Once again, Plaintiff's position is not as clear. As with the aperture spacing dispute addressed above, Plaintiff's position has shifted over time. During the claim construction meet and confer, Plaintiff focused on the pump's *anchoring* of the atomizer, specifically proposing that "the pump provides some anchoring of the atomizer to a supporting surface by the pump's weight, bulk,

[83] Patent at 11:45-49 (emphasis added).

[84] *Id.* at 14:20-23.

stability, base, or the like."[85] Later in its briefing, Plaintiff modified its proposal, adding for the first time, "*when the atomizer is connected to the pump, the connection with the* pump provides some anchoring of the atomizer to a supporting surface by the pump's weight, bulk, stability, base, or the like."[86] Plaintiff's revised construction of Claim 14 was similar, replacing "the connection with the pump" with "*the integration with* the pump."[87] According to Defendants, Plaintiff's changed proposed construction of these phrases after the parties met and conferred has resulted in Defendants' briefing focusing on proposed claim constructions that Plaintiff later abandoned without notice.[88] As explained above, the court generally is reluctant to consider new arguments or positions introduced for the first time at oral argument where circumstances leave the opposing party without a meaningful opportunity to respond.[89] But as with the aperture spacing issue decided above, Plaintiff's changing positions are ultimately irrelevant here because neither construction proposed by Plaintiff for either claim prevails.

[85] *See* Dkt. 89 (Defs.' Joint Responsive Claim Construction Brief) at 14, n. 5; *see also id.* at 14, Claim Construction Chart)("the pump provides some anchoring of the atomizer to a supporting surface by the pump's weight, bulk, stability, base, or the like," and "the pump provides some anchoring of the atomizer by the pump's weight, bulk, stability, base, or the like.").

[86] *See id.* at 14 (emphasis in original Claim Construction Chart).

[87] *Id.* (emphasis in original Claim Construction Chart).

[88] Plaintiff's shifting positions inject a level of unfairness into the process and conflict with the purpose of the Local Patent Rules, which operate under the assumption that parties know one another's positions before briefing commences. *See* Local Patent Rule 4.2, n. 1 ("Given the extensive disclosure required under these rules and the requirement to file the Joint Appendix with the Cross-Motions for Claim Construction, *the committee believed all parties would have an understanding of each other's positions prior to briefing*.") (emphasis added).

[89] *See Wi-LAN USA, Inc. v. Apple Inc*., 830 F.3d 1374, 1385 (Fed. Cir. 2016) ("We generally support a district court's case-management authority to set a schedule for claim construction that requires parties to take positions on various dates and holds the parties to these positions."); *MorphoTrust USA, LLC v. United States*, 132 Fed. Cl. 419, 420–21 (2017) ("Plaintiff's motion seeks to disallow any challenge based on the indefiniteness of these terms because they were not included in the February 13 disclosure . . . . Much of the jurisprudence in the Patent area arises in jurisdictions with special local Patent rules. Those courts typically require a showing of diligence by the party seeking amendment and only then consider whether there is prejudice to the non-moving party.") (internal citations omitted).

The dispute here centers around whether the claims require the pump to provide *some* anchoring of the atomizer or whether they simply require the pump to anchor or *firmly secure* the atomizer. Defendants' proposed "firmly secure" construction supplies a simple definition of the term "anchoring," which aligns more closely with the ordinary meaning of the claim term.[90] Since no evidence has been presented showing that "anchoring" has a technical or special meaning in the context of this invention, "[t]he plain meaning of claim language ordinarily controls[.]"[91] Merriam-Webster describes an anchor as "something that serves to hold an object *firmly*," and defines the verb "to anchor" as "to secure *firmly*."[92] Cambridge English Dictionary defines "to anchor" as "to make something . . . stay in one position by fastening . . . it *firmly*."[93] Dictionary.com defines it as "to fix or fasten; affix *firmly*."[94] Each of these definitions support Defendants' proposed construction that "a pump anchoring the atomizer" ordinarily means "a pump firmly securing the atomizer."

The Patent itself describes the concept of anchoring used as a means to achieve a secure, stable state, preventing the device from tipping over: "Anchoring the atomizer by the bulk, weight or both of the pump and housing assembly reduces the chance of breakage or spilling of an atomizer system sitting on a supporting surface."[95] This anchoring function is also explained

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[90] Patent law embraces a presumption that the ordinary and customary meaning of a claim should apply in construing a term. *See CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002); *see also Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) ("the words of a claim are generally given their ordinary and customary meaning.") (quotation marks omitted).

[91] *InterDigital Communs., LLC v. ITC*, 690 F.3d 1318, 1324 (Fed. Cir. 2012).

[92] *Anchor*, Merriam-Webster.com (accessed March 16, 2021) (defining "anchor" as "something that serves to hold an object firmly") (emphasis added).

[93] *Anchor*, Dictionary.Cambridge.org (accessed March 16, 2021) (defining "anchor" as "to make something . . . stay in one position by fastening . . . it firmly") (emphasis added).

[94] *Anchor*, Dictionary.com (accessed March 16, 2021) (defining "anchor" as "to fix or fasten; affix firmly") (emphasis added).

[95] Patent at 3:37-40.

with reference to other components of the device: "Moreover, the dimensions of the base of the housing 12 may also provide leverage against tipping . . . . Thus, the housing 12 and its contents provide a stable platform to support the atomizer 16 on a surface."[96] Hence, anchoring represents achieving a secure, stable state from which the diffuser may operate without tipping over. This meaning supports Defendants' construction with the phrase "firmly secure."

Plaintiff counters that the Patent does not support "a specific degree of anchoring force."[97] While this is true in a sense, the verb "to anchor" itself suggests a certain amount of support just as the verbs "to clench" and "to hold" suggest certain varied levels of support. Nevertheless, as described above, to anchor ordinarily means to "firmly secure."[98] Defendants' construction does not introduce a specific degree of anchoring force. Rather, it merely describes the anchoring term according to its ordinary and customary use—something is anchored when it is firmly secured.

In contrast, Plaintiff proposes adding a modifier "*some* anchoring," which has a far greater likelihood of requiring a specific or modified degree of anchoring force.[99] The word "some" implicitly suggests that the pump provides an amount less than the normal amount of anchoring. If the claims used "*some* anchoring," the Patent could potentially allow only the slightest, most nominal amount of anchoring force. Within the language of the claims and the specification, there is no evidence that the pump provides only a marginal amount of anchoring

[96] *Id.* at 6:44-49; *see also id.* at 3:37-40 ("Anchoring the atomizer by the bulk, weight or both of the pump and housing assembly reduces the chance of breakage or spilling of an atomizer system sitting on a supporting surface.").

[97] Dkt. 86 (Pl.'s Cross-Motion for Claim Construction) at 14.

[98] Dkt. 84 (Defs.' Joint Cross-Motion for Claim Construction) at 15.

[99] Dkt. 86 (Pl's Cross-Motion for Claim Construction) at 14 (emphasis added).

force.[100] Considering the unmodified use of the term "anchor" in the claims, the Patent suggests that the pump is to provide a normal amount of anchoring force, as stated by general-use dictionaries ("firmly secure").

Considering the evidence on both sides, Defendants' construction prevails. The pump anchors, or firmly secures, the atomizer. Defendants' "firmly secure" construction aligns more closely with the ordinary meaning of "anchor," "to firmly secure." The Patent also describes the concept of anchoring as a means to achieve a secure, stable state, preventing the diffuser from tipping over, which would require some sort of firmly secured anchor. On the other hand, Plaintiff's use of "some," limits the normal amount of security that the ordinary use of "anchoring" would bring.

IV. Comparatively Larger & Smaller Droplets

Claim Term	PLAINTIFF'S PROPOSED CONSTRUCTION	DEFENDANTS' PROPOSED CONSTRUCTION
"**comparatively smaller droplets**" "**comparatively larger droplets**" (claims 1, 14)	Plain and ordinary meaning	"droplets having an effective diameter of from about 1 micron to about 5 microns" "droplets having an effective diameter greater than about 5 microns"

The final dispute involves whether there should be a baseline reference point to determine which droplets are large and which are small under the claim language. The Patent refers several times to "comparatively" sized droplets. The specification initially discusses these droplets in a description of atomizing oil droplets:

> The liquid from the siphon 96 is atomized into droplets of various sizes. . . . Large droplets break into smaller droplets. Some droplets agglomerate against the

[100] Conversely, there's little-to-no evidence that the Patent requires more force than ordinarily implied under the "anchoring" term.

> wall 121 and begin to drift or drip down toward the reservoir 18. Other droplets, having comparatively smaller effective diameters, are more easily entrained in the air, and pass with it through the separator chamber and out apertures 122 in the separator plate 98.[101]

Claims 1, 2, and 14 also reference this droplet atomization process. Claims 1 and 2 recite "recovering comparatively larger droplets into the reservoir; passing comparatively smaller droplets from the atomizer out through the separator with the flow." Claim 14 recites "separating comparatively larger droplets from comparatively smaller droplets prior to exit of the comparatively smaller droplets from the atomizer." Only one reference exists in the Patent relating to what constitutes a comparatively large versus a comparatively small droplet:

> The separator and flow are sized to release with the air flow those droplets having an effective diameter of from about 1 micron to about 5 microns. Smaller droplets tend to evaporate into the air stream, while larger ones tend to settle down or agglomerate on surfaces to be returned to the reservoir.[102]

Plaintiff argues the "comparatively larger [and smaller]" terms should be left to their "plain and ordinary meaning."[103] Defendants maintain these terms require some definitional reference, like 1 to 5 microns, to avoid an indefiniteness problem.[104] "[W]hen a 'word of degree' is used, the court must determine whether the Patent provides 'some standard for measuring that degree.'"[105] "[A] Patent is invalid for indefiniteness if its claims, read in light of the specification delineating the Patent, and the prosecution history, fail to inform, with reasonable certainty,

[101] Patent at 10:44-56.

[102] *Id.* at 3:49-56.

[103] Dkt. 86 (Pl.'s Cross-Motion for Claim Construction) at 16.

[104] Dkt. 84 (Defs.' Joint Cross-Motion for Claim Construction) at 21-24.

[105] *Biosig Instruments, Inc. v. Nautilus, Inc*., 783 F.3d 1374, 1377 (Fed. Cir. 2015) (quoting *Enzo Biochem, Inc. v. Applera Corp*., 599 F.3d 1325, 1332 (Fed. Cir. 2010)).

those skilled in the art about the scope of the invention."[106] Consequently, "claims having terms of degree will fail for indefiniteness unless they 'provide objective boundaries for those of skill in the art' when read in light of the specification and the prosecution history."[107]

Here, the Patent uses the terms "comparatively larger" and "comparatively smaller," and then provides one objective boundary for determining whether a droplet is comparatively larger or smaller: the smaller droplets "release[d] with the air flow" have "an effective diameter of from about 1 micron to about 5 microns."[108] Defendants' construction, which incorporates this droplet-diameter standard, would avoid a finding of invalidity for indefiniteness.

On the other hand, Plaintiff's "plain and ordinary meaning" proposal effectively asks the court to not construe the terms at all, potentially rendering the asserted claims invalid for indefiniteness. In *United Carbon Co. v. Binney & Smith Co.*, the Supreme Court found the same term, "comparatively small," did not "add anything to the claims, for nowhere are we advised what standard is intended for comparisons."[109] The Court found that "the claims in litigation are bad for indefiniteness."[110]

In this case, the Patent itself includes a standard, allowing the claims to avoid the indefiniteness issue. The terms "comparatively larger" and "comparatively smaller" have little

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[106] *Nautilus, Inc. v. Biosig Instruments, Inc*., 572 U.S. 898, 899 (2014) ("To tolerate imprecision just short of that rendering a claim 'insolubly ambiguous' would diminish the definiteness requirement's public notice function and foster the innovation-discouraging 'zone of uncertainty,' … against which this Court has warned.").

[107] *Liberty Ammunition, Inc. v. United States*, 835 F.3d 1388, 1395-96 (Fed. Cir. 2016) (quoting *Interval Licensing LLC v. AOL, Inc*., 766 F.3d 1364, 1370-71 (Fed. Cir. 2014), cert. denied, 136 S. Ct. 59 (2015)); *see also Enzo Biochem*, 599 F.3d at 1332; *see also Berkheimer v. HP Inc*., 881 F.3d 1360, 1364 (Fed. Cir. 2018) (finding claims indefinite where "[t]he specification contains no point of comparison for skilled artisans to determine an objective boundary of 'minimal' when the archive includes some redundancies.").

[108] Patent at 3:49-56; *see also id.* at 10:65-11:4 (smaller droplets are "typically on the order of from about 1 to about 5 microns in diameter such that they will drift substantially indefinitely with ambient air movement as they evaporate.").

[109] *United Carbon Co. v. Binney & Smith Co*., 317 U.S. 228, 235, 238 (1942) ("An invention must be capable of accurate definition, and it must be accurately defined, to be Patentable.").

[110] *Id.*

meaning without some baseline reference point. Defendants' construction incorporating the Patent's droplet diameter standard provides the required reference.

CONCLUSION

The table below provides the court's final construction of each claim term at issue.

Claim Term	**Stipulated Claim Construction**		**Court's Final Construction**
"duty cycle" (claims 1 and 2)	"the fractional time of operation compared to the total elapsed time"		"the fractional time of operation compared to the total elapsed time"
"integrated with the pump" (claim 14)	"not separate from the pump"		"not separate from the pump"
Claim Term	**ESIP's Construction**	**DoTerra's Construction**	**Court's Final Construction**
discharging the flow … into an aperture "***spaced therefrom***" a distance of … one to about 10 times the … diameter" (claims 1 and 14)	Plain and ordinary meaning	Plain and ordinary meaning, or "arranged so the nearest point of the aperture from the nozzle is…"	"arranged so the nearest point of the aperture from the nozzle is…"
"***the atomizer being connected directly to a reservoir and to a pump***" (claim 1)	"the atomizer is connected directly to a reservoir and the atomizer is connected to a pump"	Plain and ordinary meaning, or "the atomizer is connected directly to a reservoir and the atomizer is connected directly to a pump"	"the atomizer is connected directly to a reservoir and the atomizer is connected to a pump"
"the atomizer being connected directly to a reservoir and to a "***a pump anchoring the atomizer to a supporting surface***" (claim 1)	"when the atomizer is connected to the pump, the connection with the pump provides some anchoring of the atomizer to a supporting surface by the pump's weight, bulk, stability, base, or the like"	Plain and ordinary meaning, or "a pump firmly securing the atomizer to a supporting surface"	"a pump firmly securing the atomizer to a supporting surface"

"***the atomizer being anchored by the pump***" (claim 14)	"when the atomizer is integrated with the pump, the integration with the pump provides some anchoring of the atomizer by the pump's weight, bulk, stability, base, or the like"	Plain and ordinary meaning, or "the atomizer being firmly secured by the pump"	"the atomizer being firmly secured by the pump"
"***comparatively smaller droplets"*** ***"comparatively larger droplets***" (claims 1 and 14)	Plain and ordinary meaning	"droplets having an effective diameter of from about 1 micron to about 5 microns" "droplets having an effective diameter greater than about 5 microns"	"droplets having a diameter of from about 1 micron to about 5 microns" "droplets having a diameter greater than about 5 microns"

Because the court adopted constructions offered by each side, the parties' Cross-Motions for Claim Construction[111] are both GRANTED IN PART and DENIED IN PART.

SO ORDERED April 16, 2021.

BY THE COURT

ROBERT J. SHELBY
United States Chief District Judge

[111] Dkts. 84 (Defs.' Cross-Motion for Claim Construction) and 86 (Pl.'s Cross Motion for Claim Construction).